

Title (en)

Base station coverage optimization using switched multi-element antennas

Title (de)

Basisstationsdeckungsoptimierung mittels geschalteten Antennen mit mehreren Elementen

Title (fr)

Optimisation de la couverture de la station de base à l'aide d'antennes multi-éléments commutées

Publication

EP 2161851 A1 20100310 (EN)

Application

EP 08360026 A 20080904

Priority

EP 08360026 A 20080904

Abstract (en)

A femto base station and a method are disclosed. The method comprises the steps of: a) providing a switched multiple antenna array comprising a plurality of antennas, one or more antennas from the plurality of antennas being switchable to form one of a plurality of antenna groups, each antenna group providing a corresponding predetermined fixed beam pattern; b) determining a transmission power for each fixed beam pattern which provides less than a predefined maximum occurrence of unwanted user equipment mobility events over a predetermined period of time; c) determining a quality of service provided to registered user equipment for each fixed beam pattern at that transmission power; and d) selecting that antenna group and transmission power which generates a predetermined fixed beam pattern which maximises quality of service to registered user equipment whilst not exceeding the predefined maximum occurrence of unwanted user equipment mobility events. In this way, the fixed beam pattern and transmission power combination is selected which maximises the coverage provided to registered user equipment whilst ensuring that an acceptable level of unwanted mobility events is not exceeded. By ensuring that the number of unwanted mobility events remains low, the number of mobility procedures is minimised which minimises the signalling required to the core network and also reduces the risk of call drop from passing user equipment from occurring.

IPC 8 full level

H04W 36/18 (2009.01); **H04B 7/06** (2006.01)

CPC (source: EP)

H04B 7/0686 (2013.01); **H04B 7/0691** (2013.01); **H04B 7/0695** (2013.01); **H04W 16/28** (2013.01)

Citation (applicant)

CLAUSSEN H ET AL.: "Self-optimization of Coverage for Femtocell Deployments", WIRELESS TELECOMMUNICATIONS SYMPOSIUM 2008, IEEE, 24 April 2008 (2008-04-24), pages 278 - 285, XP031275017

Citation (search report)

- [A] CLAUSSEN H ET AL: "Self-optimization of coverage for femtocell deployments", WIRELESS TELECOMMUNICATIONS SYMPOSIUM, 2008. WTS 2008, IEEE, PISCATAWAY, NJ, USA, 24 April 2008 (2008-04-24), pages 278 - 285, XP031275017, ISBN: 978-1-4244-1869-5
- [A] CLAUSSEN H ET AL: "An overview of the femtocell concept", BELL LABS TECHNICAL JOURNAL, WILEY, CA, US, vol. 1, no. 13, 21 March 2008 (2008-03-21), pages 221 - 245, XP001512256, ISSN: 1089-7089
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Designated contracting state (EPC)

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Designated extension state (EPC)

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